



TC RANGE APPLICATION

There is a TC range control panel available to work with each Howden product requiring ancillary control gear, whether from our standard range or custom designed to suit the heater and application.

STANDARD RANGE

The standard TC range is suitable for use with many Howden immersion heaters requiring ancillary control gear. There are two ranges of control available, Option 1 and Option 2.

OPTION 1 SPECIFICATION

- Wall mounting.
- Gland plates : bottom entry, removable pattern.
- Supply : 415V, 3 phase, 50 Hz, 4 wire or 240V single phase, 2 wire.
- Door interlocked isolator.
- 'Power On' lamp on the door.
- Suitably rated contactor(s).
- MCB load fuses protecting supply and control circuitry.
- Thermostatically controlled circuits.
- All din rail mounted.

OPTION 2 SPECIFICATION

As per option 1 specification with but the addition of:

- 'Heater - On' lamp(s).
- 'Start / Reset' button.
- 'Over Temperature' indication. The addition of an over-temperature indicator aids the identification and rectification of faults.

SPECIALIST APPLICATIONS

If there is no standard control panel suitable for the Howden heater of interest, we can design a custom control panel to suit your heater and application. Please contact our Technical Department providing details of the heater you wish to control, a description of your application and any specific requirements you may have.

LIST No.		kW LOAD @ 415V	No. OF CIRCUITS	DIMENSIONS (mm)		
OPTION 1	OPTION 2			HEIGHT	WIDTH	DEPTH
TC107	TC207	6	1	300	300	150
TC108	TC208	9	1	300	300	150
TC109	TC209	12	1	300	300	150
TC110	TC210	12	2	300	300	150
TC101	TC201	18	1	300	300	150
TC111	TC211	18	2	300	300	150
TC102	TC202	24	1	300	300	150
TC112	TC212	24	2	300	300	150
TC113	TC213	30	1	400	300	150
TC103	TC203	30	2	400	300	150
TC104	TC204	36	1	400	300	150
TC114	TC212	36	2	400	300	150
TC105	TC205	48	2	500	300	200
TC106	TC206	60	2	500	300	200

MOUNTING

All standard control panels are wall mountable. Non-standard control panels can be floor mounting when required.

OPERATING TEMPERATURE

Standard models are designed to operate at an ambient temperature up to 25°C.

VOLTAGE

Standard control panels are designed to control the stated kW loading at 240 volts single phase or 415 volts three phase, AC supplies with a 240V control circuit.

Non-standard models can be supplied designed specially to suit operating voltages up to 690 volts. Control circuit voltages are provided to suit customer requirements such as 24V or 110V. Please contact our Technical Department.

CONSTRUCTION

All cables are tri-rated and manufactured to BS6231.

All control panels are supplied within a minimum IP55 rated painted mild steel terminal enclosure. Standard control panels are supplied with a bottom entry removable gland plate which is to be drilled on site.

COMMON VARIATIONS

Please contact our Technical Department for further details.

- Various operating voltages, single phase, three phase star or delta.
- Digital PID temperature control.
- Thyristor control.
- Step control.
- RCD Protection.
- Reduced control circuit voltage, e.g. 24 volts.
- Volt-free alarm contacts, e.g. to BMS system.
- Remote enable.
- Low water alarm.
- Low flow alarm.
- 7 Day programmable timer.
- Pump / Fan interlocks.
- Pump / Fan controls
- Anti-condensation heater.
- Metering of electrical inputs and output kW load.